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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|----------------------|------------------|
| 10/698,380 | 11/03/2003 | Sung-Hun Kim | 0630-1860P | 2754 |
| 2292 | 7590 | 10/19/2004 | EXAMINER | |
| BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747 | | | MACCHIAROLO, PETER J | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2879 | |

DATE MAILED: 10/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|--|--------------------------------------|--|
| Office Action Summary | Application No. 10/698,380 | Applicant(s) KIM, SUNG-HUN | |
| | Examiner Peter J Macchiarolo | Art Unit 2879 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6, 8, 10 and 11 is/are rejected.
- 7) ☒ Claim(s) 5, 7 and 9 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>1103</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Preliminary Amendment

2. The Preliminary Amendment to the specification filed 11/03/2003 has been considered and entered.

Information Disclosure Statement

3. The information disclosure statement (IDS) submitted on 11/03/2003 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Specification

4. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Drawings

5. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the ration $Sh/Sv \geq 1$ at an end portion of a diagonal axis (claim 3) and long axis (claim 4) of the shadow mask, and the ration $B/A \geq 1.1$

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(claim 7) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

6. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1, 2, 6, and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Inoue (JP 2002-42671; “Inoue”).

8. Regarding claim 1, Inoue shows in figures 1 and 10, a panel (1) having an outer surface which is substantially flat and an inner surface which has a radius of curvature, and a shadow mask (53) having a plurality of apertures (42) through which electron beams pass (Bc), wherein a ratio Sh/Sv satisfies a condition of $Sh/Sv < 1$; i.e. $350/960 = 0.36$.

9. Regarding claims 2 and 6, Inoue shows in figure 15, the ratio $Sh/Sv < 1$ is at an end portion of a short axis of the shadow mask.

10. Regarding claim 8, Inoue shows in figure 8 the cathode ray tube is used for a monitor.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. **Claims 3, 4, 10, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Inoue in view of Ishii (USPN 6548954; "Ishii").**
12. Regarding claims 3 and 4, Inoue is silent to $Sh/Sv \geq 1$ at an end portion of a diagonal axis or at an end portion in a long axis of the shadow mask.
13. However, Ishii teaches when the radii of the shadow mask apertures differ, but $Sh/Sv = 1$ throughout the entire shadow mask, proper white uniformity can be achieved in a CRT having a front panel with a flat outer surface and curved inner surface.¹
14. Therefore, in view of the above discussion, it would have been obvious to one having ordinary skill in the art at the time the invention was made to construct the CRT of Inoue with $Sh/Sv \geq 1$ to provide a CRT with proper white uniformity.
15. Regarding claims 10 and 11, Inoue is silent to the ratio Sh/Sv satisfying a condition $0.95 \leq Sh/Sv \leq 1.03$ at a region corresponding to 80%-95% of a distance from a center of the shadow mask to an end of a long axis or diagonal axis of the shadow mask.

¹ Ishii, col. 2, ll. 1-20.

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16. However, Ishii teaches when $Sh/Sv = 1$ throughout the entire shadow mask, proper white uniformity can be achieved in a CRT having a front panel with a flat outer surface and curved inner surface.

17. The reason for combining and motivation is the same as for claim 3.

Allowable Subject Matter

18. Claims 5, 7, and 9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

19. The following is a statement of reasons for the indication of allowable subject matter:

20. The prior art of record to motivates or discloses the limitations of claim 5, except that Sh/Sv satisfies the equality, $0.89 \leq Sh/Sv \leq 0.95$ at the central portion of the shadow mask, in combination with the remaining limitations of the claim.

21. The prior art of record to motivates or discloses the limitations of claim 7, except that by defining the ratio Sh/Sv at the central portion of the shadow mask as A and the ratio Sh/Sv at an end portion of a diagonal axis of the shadow mask as B, a ratio B/A satisfies a condition $B/A \geq 1.1$, in combination with the remaining limitations of the claim.

22. The prior art of record to motivates or discloses the limitations of claim 9, except that the ratio Sh/Sv satisfies a condition $0.90 < Sh/Sv < 0.96$ at a region corresponding to 80%-95% of a distance from a center of the shadow mask to an end of a short axis of the shadow mask, in combination with the remaining limitations of the claim.

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Conclusion

23. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

24. USPN 6486596 to Inoue et al is a US equivalent to the above cited JP patent to Inoue.

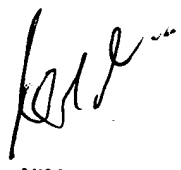
25. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter J Macchiarolo whose telephone number is (571) 272-2375.

The examiner can normally be reached on 8:30 - 5:00, M-F.

26. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar Patel can be reached on (571) 272-2475. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

27. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

pjm


NIMESHKUMAR D. PATEL
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800